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10/820,205	04/06/2004	Daniel Scott Woodman	22090-3	7418
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John S. Beulick Armstrong Teasdale LLP Suite 2600 One Metropolitan Square St. Louis, MO 63102		EXAMINER LUKS, JEREMY AUSTIN		
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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holtrop (4,476,183) in view of Juriga (5,536,556), Weber (4,940,629) and Orimo (5,817,408).

With respect to Claims 1, 3, 10, 11, 13, 20, 22, 23 and 26, Holtrop discloses a porous fiber reinforced thermoplastic core layer (Figure 2, #13) comprising a thermoplastic material (Col. 3, Lines 36-37), said core layer (13) having a first surface and a second surface; a tie layer (16) covering said second surface of said core layer (13); a barrier layer (12) covering said tie layer (16), said tie layer (16) bonding said barrier layer (12) to said core layer (13) (Col. 3, Lines 50-55); and a fabric layer (21) comprising a non-woven fabric bonded (18) to said barrier layer (12) (Col. 5, Lines 3-10), said fabric layer (21) forming an outer surface of a panel (10).

Holtrop fails to disclose a thermoplastic core layer comprising a thermoplastic material and from about 20 weight percent to about 80 weight percent fibers, a density from about 0.2 gm/cc to about 1.8 gm/cc; a tie layer comprising a thermoplastic material; and an air permeable barrier layer comprising a non-permeable thermoplastic

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material having a melting temperature higher than the melting temperature of said core layer thermoplastic material; a decorative layer comprises a thermoplastic film comprising at least one of polyvinyl chloride, a polyolefin, thermoplastic polyester, and a thermoplastic elastomer; a tie layer having a low melting temperature covering a second surface of a core layer, and said tie layer bonding a barrier layer to said core layer; and a barrier layer having a melting temperature higher than that of the tie layer. Weber discloses a thermoplastic core layer comprising a thermoplastic material and from about 20 weight percent to about 80 weight percent fibers, a density from about 0.2 gm/cc to about 1.8 gm/cc (Col. 1, Lines 44-49). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Holtrop, with the apparatus of Weber to provide composite materials which are notable for low density, excellent heat insulation properties, an outer skin of high strength and high surface quality, high flexural strength, high energy absorption in relation to mechanical impact, reduced thermal expansion and cold flow tendency and a favorable flammability rating combined with simple manufacturing and processing properties.

Weber fails to disclose a tie layer comprising a thermoplastic material, and an air permeable barrier layer comprising a non-permeable thermoplastic material having a melting temperature higher than the melting temperature of said core layer thermoplastic material; a decorative layer comprises a thermoplastic film comprising at least one of polyvinyl chloride, a polyolefin, thermoplastic polyester, and a thermoplastic elastomer; a tie layer having a low melting temperature covering a second surface of a core layer, and said tie layer bonding a barrier layer to said core layer; and a barrier

layer having a melting temperature higher than that of the tie layer. Juriga discloses a tie layer (Figure 2, #42) comprising a thermoplastic material (Col. 6, Lines 27-35); a decorative layer (Figure 4, #28) comprises a thermoplastic film (50) comprising at least one of polyvinyl chloride, a polyolefin, thermoplastic polyester, and a thermoplastic elastomer (Col. 8, Lines 10-25); a tie layer (Figure 2, #42) having a low melting temperature (Col. 6, Lines 20-23) covering a second surface of a core layer (36), and said tie layer (42) bonding a barrier layer (38) to said core layer (36). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the structures of Holtrop as modified, with the apparatus of Juruga to provide a thermosetting adhesive to the structure that will bond and harden after being heat molded to secure the various layers in the molded absorber to one another, and be able to withstand heat distortion or deterioration.

Juriga fails to disclose an air permeable barrier layer comprising a non-permeable thermoplastic material having a melting temperature higher than the melting temperature of said core layer thermoplastic material; and a barrier layer having a melting temperature higher than that of the tie layer. Orimo discloses an air impermeable barrier layer (Figure 1, #26) comprising a non-permeable thermoplastic material (Col. 4, Lines 18-46) having a melting temperature higher than the melting temperature of a core layer (24) thermoplastic material (Col. 3, Lines 23-40) (Col. 4, Line 63- Col. 6, Line 6); and a barrier layer (Figure 1, #26) having a higher melting point (Col. 6, Lines 27-31) than that of a tie layer (Col. 6, Lines 1-20) and when used in combination. It would have been obvious to one of ordinary skill in the art at the time of

the invention to combine the apparatus of Holtrop as modified, with the apparatus of Orimo to improve sound insulation characteristics, as well as protect the sound absorbing layers from damage.

With respect to Claims 2, 12 and 21, Holtrop discloses a decorative layer (Figure 2, #25) bonded to a first surface of a core layer (13).

With respect to Claims 4-6, 8, 9, 14-16, 18, 19, 24, 25 and 27, Holtrop discloses decorative layer (Figure 2, #25) comprising a layered laminate comprising a foam core (14), an adhesive layer (19) between the core layer (13) and decorative layer (25) (Col. 5, Lines 50-53), and woven or non-woven fabric (22), said foam core (14) comprising at least one of polypropylene, polyethylene, polyvinyl chloride, and polyurethane (Col. 4, Lines 17-21 and 28-31), and non-woven fabric (22) comprising at least one of polyvinyl chloride, a polyolefin, thermoplastic polyester, and a thermoplastic elastomer (Col. 5, Lines 6-17). Holtrop fails to disclose a thermoplastic adhesive comprising at least one layer of thermoplastic adhesive material. However, Juriga discloses a thermoplastic adhesive comprising at least one layer of thermoplastic adhesive material (Col. 6, Lines 27-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the structures of Holtrop as modified, with the apparatus of Juruga to provide a thermosetting adhesive to the structure that will bond and harden after being heat molded to secure the various layers in the molded absorber to one another, and be able to withstand heat distortion or deterioration.

With respect to Claims 7 and 17, Holtrop discloses decorative layer (Col. 6, Lines 55-58) comprising a layered laminate (Figure 3, #30) comprising a foam core (34),

a non-woven batting (35), and woven or non-woven fabric (42), said foam core (34) comprising at least one of polypropylene, polyethylene, polyvinyl chloride, and polyurethane (Col. 4, Lines 17-21 and 28-31; Col. 6, Lines 3-10), said non-woven batting (35) comprising at least one polyester material and polyamide fibers (Col. 6, Lines 2-3).

Response to Arguments

2. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection. The Examiner considers the obvious combination of Holtrop, Juriga, Weber and Orimo to teach all of the limitations as claimed by Applicant.


Conclusion

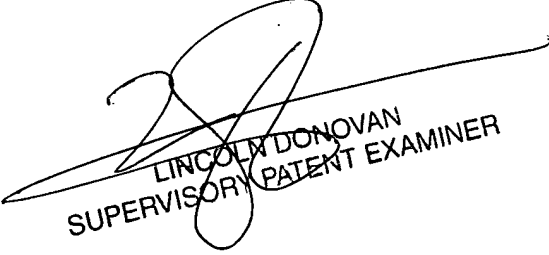
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent arts of record relating to decorative interior sound absorbing panels are disclosed in the PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Luks whose telephone number is (571) 272-2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Patent Examiner
Art Unit 2837
Class 181


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